

# SEQUENCE LISTING

<110> Rosanne M. Crooke  
Mark J. Graham  
Kristina M. Lemonidis

<120> ANTISENSE MODULATION OF ACYL COA CHOLESTEROL ACYLTRANSFERASE-2  
EXPRESSION

<130> ISPH-0588

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Met Glu Pro Gly Gly Ala Arg Leu Arg Leu Gln Arg Thr Glu Gly Leu  
1 5 10 15

gga ggg gag cgg gag cgc caa ccc tgt gga gat gga aac act gag acg 96  
Gly Gly Glu Arg Glu Arg Gln Pro Cys Gly Asp Gly Asn Thr Glu Thr  
20 25 30

cac aga gcc ccg gac ttg gta caa tgg acc cga cac atg gag gct gtg 144  
His Arg Ala Pro Asp Leu Val Gln Trp Thr Arg His Met Glu Ala Val

| 35  | 40  | 45  |     |
|---|-----|-----|-----|
| aag gca caa ttg ctg gag caa gcg cag gga caa ctg agg gag ctg ctg |     |     | 192 |
| Lys Ala Gln Leu Leu Glu Gln Ala Gln Gly Gln Leu Arg Glu Leu Leu |     |     |     |
| 50  | 55  | 60  |     |
| gat cgg gcc atg cgg gag gct ata caa tcc tac cca tca caa gac aaa |     |     | 240 |
| Asp Arg Ala Met Arg Glu Ala Ile Gln Ser Tyr Pro Ser Gln Asp Lys |     |     |     |
| 65  | 70  | 75  | 80  |
| cct ctg ccc cca cct ccc cca ggt tcc ttg agc agg acc cag gag cca |     |     | 288 |
| Pro Leu Pro Pro Pro Pro Pro Gly Ser Leu Ser Arg Thr Gln Glu Pro |     |     |     |
| 85  | 90  | 95  |     |
| tcc ctg ggg aaa cag aaa gtt ttc atc atc cgc aag tcc ctg ctt gat |     |     | 336 |
| Ser Leu Gly Lys Gln Lys Val Phe Ile Ile Arg Lys Ser Leu Leu Asp |     |     |     |
| 100   | 105 | 110 |     |
| gag ctg atg gag gtg cag cat ttc cgc acc atc tac cac atg ttc atc |     |     | 384 |
| Glu Leu Met Glu Val Gln His Phe Arg Thr Ile Tyr His Met Phe Ile |     |     |     |
| 115   | 120 | 125 |     |
| gct ggc ctg tgt gtc ttc atc atc agc acc ctg gcc atc gac ttc att |     |     | 432 |
| Ala Gly Leu Cys Val Phe Ile Ile Ser Thr Leu Ala Ile Asp Phe Ile |     |     |     |
| 130   | 135 | 140 |     |
| gat gag ggc agg ctg ctg ctg gag ttt gac cta ctg atc ttc agc ttc |     |     | 480 |
| Asp Glu Gly Arg Leu Leu Leu Glu Phe Asp Leu Leu Ile Phe Ser Phe |     |     |     |
| 145   | 150 | 155 | 160 |
| gga cag ctg cca ttg gcg ctg gtg acc tgg gtg ccc atg ttt ctg tcc |     |     | 528 |
| Gly Gln Leu Pro Leu Ala Leu Val Thr Trp Val Pro Met Phe Leu Ser |     |     |     |
| 165   | 170 | 175 |     |
| acc ctg ttg gcg ccg tac cag gcc cta cgg ctg tgg gcc agg ggc acc |     |     | 576 |
| Thr Leu Leu Ala Pro Tyr Gln Ala Leu Arg Leu Trp Ala Arg Gly Thr |     |     |     |
| 180   | 185 | 190 |     |
| tgg acg cag gcg acg ggc ctg ggc tgt gcg ctt tta gcc gcc cac gcc |     |     | 624 |
| Trp Thr Gln Ala Thr Gly Leu Gly Cys Ala Leu Leu Ala Ala His Ala |     |     |     |
| 195   | 200 | 205 |     |
| gtg gtg ctc tgc gcg ctg ccg gtc cac gtg gcc gtg gag cat cag ctc |     |     | 672 |
| Val Val Leu Cys Ala Leu Pro Val His Val Ala Val Glu His Gln Leu |     |     |     |
| 210   | 215 | 220 |     |
| ccg ccg gcc tcc cgt tgt gtc ctg gtc ttc gag cag gtt agg ttc ctg |     |     | 720 |
| Pro Pro Ala Ser Arg Cys Val Leu Val Phe Glu Gln Val Arg Phe Leu |     |     |     |
| 225   | 230 | 235 | 240 |
| atg aaa agc tac tcc ttc ctg aga gag gct gtg cct ggg atc ctt cgt |     |     | 768 |
| Met Lys Ser Tyr Ser Phe Leu Arg Glu Ala Val Pro Gly Ile Leu Arg |     |     |     |
| 245   | 250 | 255 |     |
| gcc aga cga ggt gag ggg atc cag gcc ccc agt ttc tcc agc tac ctc |     |     | 816 |
| Ala Arg Arg Gly Glu Gly Ile Gln Ala Pro Ser Phe Ser Tyr Leu     |     |     |     |
| 260   | 265 | 270 |     |

|   |      |
|---|------|
| tac ttc ctc ttc tgc cca aca ctc atc tac agg gag act tac cct agg | 864  |
| Tyr Phe Leu Phe Cys Pro Thr Leu Ile Tyr Arg Glu Thr Tyr Pro Arg |      |
| 275 280 285   |      |
| acg ccc tat gtc agg tgg aat tat gtg gcc aag aac ttt gcc cag gcc | 912  |
| Thr Pro Tyr Val Arg Trp Asn Tyr Val Ala Lys Asn Phe Ala Gln Ala |      |
| 290 295 300   |      |
| ctg gga tgt gtg ctc tat gcc tgc ttc atc ctg ggc cgc ctc tgt gtt | 960  |
| Leu Gly Cys Val Leu Tyr Ala Cys Phe Ile Leu Gly Arg Leu Cys Val |      |
| 305 310 315 320   |      |
| cct gtc ttt gcc aac atg agc cga gag ccc ttc agc acc cgt gcc ctg | 1008 |
| Pro Val Phe Ala Asn Met Ser Arg Glu Pro Phe Ser Thr Arg Ala Leu |      |
| 325 330 335   |      |
| gtg ctc tct atc ctg cat gcc acg ttg cca ggc atc ttc atg ctg ctg | 1056 |
| Val Leu Ser Ile Leu His Ala Thr Leu Pro Gly Ile Phe Met Leu Leu |      |
| 340 345 350   |      |
| ctc atc ttc ttt gcc ttc ctc cat tgc tgg ctc aac gcc ttt gcc gag | 1104 |
| Leu Ile Phe Phe Ala Phe Leu His Cys Trp Leu Asn Ala Phe Ala Glu |      |
| 355 360 365   |      |
| atg cta cga ttt gga gac agg atg ttc tac cgg gac tgg tgg aac tca | 1152 |
| Met Leu Arg Phe Gly Asp Arg Met Phe Tyr Arg Asp Trp Trp Asn Ser |      |
| 370 375 380   |      |
| acg tcc ttc tcc aac tac tac cgc act tgg aac gtg gtg gtc cat gac | 1200 |
| Thr Ser Phe Ser Asn Tyr Tyr Arg Thr Trp Asn Val Val Val His Asp |      |
| 385 390 395 400   |      |
| tgg ctg tac agc tac gtg tat cag gat ggg ctg cgg ctc ctt ggt gcc | 1248 |
| Trp Leu Tyr Ser Tyr Val Tyr Gln Asp Gly Leu Arg Leu Leu Gly Ala |      |
| 405 410 415   |      |
| cgg gcc cga ggg gta gcc atg ctg ggt gtg ttc ctg gtc tcc gca gtg | 1296 |
| Arg Ala Arg Gly Val Ala Met Leu Gly Val Phe Leu Val Ser Ala Val |      |
| 420 425 430   |      |
| gcc cat gag tat atc ttc tgc ttc gtc ctg ggg ttc ttc tat ccc gtc | 1344 |
| Ala His Glu Tyr Ile Phe Cys Phe Val Leu Gly Phe Phe Tyr Pro Val |      |
| 435 440 445   |      |
| atg ctg ata ctc ttc ctt gtc att gga gga atg ttg aac ttc atg atg | 1392 |
| Met Leu Ile Leu Phe Leu Val Ile Gly Gly Met Leu Asn Phe Met Met |      |
| 450 455 460   |      |
| cat gac cag cgc acc ggc ccg gca tgg aac gtg ctg atg tgg acc atg | 1440 |
| His Asp Gln Arg Thr Gly Pro Ala Trp Asn Val Leu Met Trp Thr Met |      |
| 465 470 475 480   |      |
| ctg ttt cta ggc cag gga atc cag gtc agc ctg tac tgc cag gag tgg | 1488 |
| Leu Phe Leu Gly Gln Gly Ile Gln Val Ser Leu Tyr Cys Gln Glu Trp |      |
| 485 490 495   |      |

|   |      |
|---|------|
| tac gca cgg cgg cac tgc ccc tta ccc cag gca act ttc tgg ggg ctg | 1536 |
| Tyr Ala Arg Arg His Cys Pro Leu Pro Gln Ala Thr Phe Trp Gly Leu |      |
| 500 505 510   |      |

|   |      |
|---|------|
| gtg aca cct cga tct tgg tcc tgc cat acc tag | 1569 |
| Val Thr Pro Arg Ser Trp Ser Cys His Thr     |      |
| 515 520                                     |      |

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 <223> PCR Primer

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 <211> 15  
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<220>  
 <223> PCR Primer

|                   |    |
|-------------------|----|
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| cccggggcacc aagga | 15 |

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 <211> 25  
 <212> DNA  
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<220>  
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|                             |    |
|-----------------------------|----|
| <400> 6                     |    |
| ctacgtgtat caggatgggc tgcgg | 25 |

<210> 7  
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<220>  
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|                      |    |
|----------------------|----|
| <400> 7              |    |
| gaaggtgaag gtcggagtc | 19 |

<210> 8  
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Sequence 20040303

<220>  
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<210> 9  
<211> 20  
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<220>  
<223> PCR Probe

<400> 9  
caagcttccc gttctcagcc 20

<210> 10  
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<212> DNA  
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<220>  
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1 5

cgg agg aga gaa ggg ctg gga gag gag cag gag aag gga gcc cgt gga 101  
Arg Arg Arg Glu Gly Leu Gly Glu Glu Gln Glu Lys Gly Ala Arg Gly  
10 15 20

gga gaa ggg aac gca agg aca cac gga acc cca gac ttg gtg caa tgg 149  
Gly Glu Gly Asn Ala Arg Thr His Gly Thr Pro Asp Leu Val Gln Trp  
25 30 35 40

act cga cat atg gag gct gtg aag acn cag ttt ctg gag caa gca cag 197  
Thr Arg His Met Glu Ala Val Lys Thr Gln Phe Leu Glu Gln Ala Gln  
45 50 55

aga gag ttg gca gag ctg ttg gat cgg gcc cta tgg gag gct atg caa 245  
Arg Glu Leu Ala Glu Leu Leu Asp Arg Ala Leu Trp Glu Ala Met Gln  
60 65 70

gct tac ccc aaa caa gac aga cct ctt ccc tcc gct gcc cca gat tct 293  
Ala Tyr Pro Lys Gln Asp Arg Pro Leu Pro Ser Ala Ala Pro Asp Ser  
75 80 85

aca agc aag acc ccg gag tta cgc cct gga aaa cgg aaa gtt ttc gtc 341  
Thr Ser Lys Thr Pro Glu Leu Arg Pro Gly Lys Arg Lys Val Phe Val  
90 95 100

gcc cgc aag tca ctg atc gat gag cta atg gag gtg caa cat ttc cga 389

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Ala | Arg | Lys | Ser | Leu | Ile | Asp | Glu | Leu | Met | Glu | Val | Gln | His | Phe | Arg |      |
| 105 |     |     |     |     | 110 |     |     |     |     | 115 |     |     |     |     | 120 |      |
| acc | atc | tac | cac | atg | ttc | ata | gcg | ggc | cta | tgg | ttc | ttg | atc | atc | agc | 437  |
| Thr | Ile | Tyr | His | Met | Phe | Ile | Ala | Gly | Leu | Trp | Phe | Leu | Ile | Ile | Ser |      |
|     |     |     |     | 125 |     |     |     |     | 130 |     |     |     |     |     | 135 |      |
| acc | ctg | gcc | atc | gac | ttc | att | gat | gag | ggc | agg | ttg | atg | ctg | gag | ttt | 485  |
| Thr | Leu | Ala | Ile | Asp | Phe | Ile | Asp | Glu | Gly | Arg | Leu | Met | Leu | Glu | Phe |      |
|     |     |     |     | 140 |     |     |     | 145 |     |     |     |     |     | 150 |     |      |
| gac | tta | ctc | ctc | ttc | agc | ttc | gga | cag | ctg | ccc | ttg | gcg | ctg | atg | acc | 533  |
| Asp | Leu | Leu | Leu | Phe | Ser | Phe | Gly | Gln | Leu | Pro | Leu | Ala | Leu | Met | Thr |      |
|     |     |     |     | 155 |     |     | 160 |     |     |     |     |     | 165 |     |     |      |
| tgg | gtt | ccc | atg | ttc | ctg | tat | acg | ctc | cta | gtg | ccc | tac | cag | acc | ctg | 581  |
| Trp | Val | Pro | Met | Phe | Leu | Tyr | Thr | Leu | Leu | Val | Pro | Tyr | Gln | Thr | Leu |      |
|     | 170 |     |     |     |     | 175 |     |     |     |     | 180 |     |     |     |     |      |
| tgg | ctg | tgg | gcc | agg | ccg | cgc | gct | ggg | ggt | gcc | tgg | atg | ctg | ggg | gcc | 629  |
| Trp | Leu | Trp | Ala | Arg | Pro | Arg | Ala | Gly | Gly | Ala | Trp | Met | Leu | Gly | Ala |      |
| 185 |     |     |     |     | 190 |     |     |     |     | 195 |     |     |     |     | 200 |      |
| agc | ctg | ggc | tgc | gtt | ctg | ctg | gct | gcc | cac | gct | gtg | gtg | ctc | tgc | gtc | 677  |
| Ser | Leu | Gly | Cys | Val | Leu | Leu | Ala | Ala | His | Ala | Val | Val | Leu | Cys | Val |      |
|     |     |     |     | 205 |     |     |     |     | 210 |     |     |     |     | 215 |     |      |
| ctg | ccg | gtg | cac | gtg | tca | gtg | agg | cat | gag | ctt | ccg | ccc | gcc | tgc | cgc | 725  |
| Leu | Pro | Val | His | Val | Ser | Val | Arg | His | Glu | Leu | Pro | Pro | Ala | Ser | Arg |      |
|     |     |     |     | 220 |     |     |     | 225 |     |     |     |     | 230 |     |     |      |
| tgc | gtg | ctg | gtc | ttt | gag | cag | gtc | aga | ttg | ctg | atg | aaa | agc | tac | tcc | 773  |
| Cys | Val | Leu | Val | Phe | Glu | Gln | Val | Arg | Leu | Leu | Met | Lys | Ser | Tyr | Ser |      |
|     |     | 235 |     |     |     |     | 240 |     |     |     |     | 245 |     |     |     |      |
| ttc | ctg | aga | gag | act | gtg | cct | ggg | atc | ttt | tgt | gtc | aga | cga | gga | aag | 821  |
| Phe | Leu | Arg | Glu | Thr | Val | Pro | Gly | Ile | Phe | Cys | Val | Arg | Arg | Gly | Lys |      |
|     | 250 |     |     |     |     | 255 |     |     |     |     | 260 |     |     |     |     |      |
| ggc | atc | agc | ccc | cca | agt | ttc | tcc | agc | tac | ctc | tac | ttc | ctc | ttc | tgc | 869  |
| Gly | Ile | Ser | Pro | Pro | Ser | Phe | Ser | Ser | Tyr | Leu | Tyr | Phe | Leu | Phe | Cys |      |
| 265 |     |     |     |     | 270 |     |     |     |     | 275 |     |     |     |     | 280 |      |
| cct | aca | ctt | atc | tac | aga | gag | aca | tac | ccc | agg | aca | ccc | agc | atc | agg | 917  |
| Pro | Thr | Leu | Ile | Tyr | Arg | Glu | Thr | Tyr | Pro | Arg | Thr | Pro | Ser | Ile | Arg |      |
|     |     |     |     | 285 |     |     |     |     | 290 |     |     |     |     | 295 |     |      |
| tgg | aac | tat | gtg | gcc | aag | aac | ttt | gcc | cag | gtc | ctg | ggc | tgt | ttg | ctc | 965  |
| Trp | Asn | Tyr | Val | Ala | Lys | Asn | Phe | Ala | Gln | Val | Leu | Gly | Cys | Leu | Leu |      |
|     |     |     | 300 |     |     |     |     | 305 |     |     |     |     | 310 |     |     |      |
| tat | gcc | tgc | ttc | atc | ctg | ggc | cgc | ctc | tgt | gtc | cct | gtc | ttt | gcc | aac | 1013 |
| Tyr | Ala | Cys | Phe | Ile | Leu | Gly | Arg | Leu | Cys | Val | Pro | Val | Phe | Ala | Asn |      |
|     |     | 315 |     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |      |
| atg | agc | cgg | gaa | ccc | ttc | agc | acc | cgg | gct | ctg | ctg | ctc | tcc | atc | ttg | 1061 |
| Met | Ser | Arg | Glu | Pro | Phe | Ser | Thr | Arg | Ala | Leu | Leu | Leu | Ser | Ile | Leu |      |

| 330   | 335 | 340 |      |
|---|-----|-----|------|
| cat gcc acg ggg cca ggc atc ttc atg ctg ctc ctc atc ttc ttc gcc |     |     | 1109 |
| His Ala Thr Gly Pro Gly Ile Phe Met Leu Leu Leu Ile Phe Phe Ala |     |     |      |
| 345   | 350 | 355 | 360  |
| ttc ctg cac tgc tgg ctc aac gcc ttc gcc gag atg ctg cgg ttt gga |     |     | 1157 |
| Phe Leu His Cys Trp Leu Asn Ala Phe Ala Glu Met Leu Arg Phe Gly |     |     |      |
|   | 365 | 370 | 375  |
| gac agg atg ttc tac cgg gac tgg tgg aac tcg act tcc ttc tcc aac |     |     | 1205 |
| Asp Arg Met Phe Tyr Arg Asp Trp Trp Asn Ser Thr Ser Phe Ser Asn |     |     |      |
|   | 380 | 385 | 390  |
| tac tac cgc acc tgg aac gtc gtg gtc cat gac tgg ctg tac agc tat |     |     | 1253 |
| Tyr Tyr Arg Thr Trp Asn Val Val Val His Asp Trp Leu Tyr Ser Tyr |     |     |      |
|   | 395 | 400 | 405  |
| gtg tat caa gat ggg ctg tgg ctc tta ggc agg cgg gct cgc ggg gtg |     |     | 1301 |
| Val Tyr Gln Asp Gly Leu Trp Leu Leu Gly Arg Arg Ala Arg Gly Val |     |     |      |
|   | 410 | 415 | 420  |
| gcc atg ctg gga gtg ttc ctg gtg tct gcg gtg gtt cat gag tat atc |     |     | 1349 |
| Ala Met Leu Gly Val Phe Leu Val Ser Ala Val Val His Glu Tyr Ile |     |     |      |
|   | 425 | 430 | 435  |
| ttc tgc ttc gtc ctg ggg ttc ttc tac ccg gtc atg ctg atg cta ttc |     |     | 1397 |
| Phe Cys Phe Val Leu Gly Phe Phe Tyr Pro Val Met Leu Met Leu Phe |     |     |      |
|   | 445 | 450 | 455  |
| ctt gtt ttc ggg ggg ctg ctg aat ttc acc atg aac gac agg cac aca |     |     | 1445 |
| Leu Val Phe Gly Gly Leu Leu Asn Phe Thr Met Asn Asp Arg His Thr |     |     |      |
|   | 460 | 465 | 470  |
| ggg cca gcc tgg aac atc ctg atg tgg acc ttt ctc ttc atg ggc cag |     |     | 1493 |
| Gly Pro Ala Trp Asn Ile Leu Met Trp Thr Phe Leu Phe Met Gly Gln |     |     |      |
|   | 475 | 480 | 485  |
| ggc atc cag gtc agc cta tac tgc cag gag tgg tat gct cgt cga cac |     |     | 1541 |
| Gly Ile Gln Val Ser Leu Tyr Cys Gln Glu Trp Tyr Ala Arg Arg His |     |     |      |
|   | 490 | 495 | 500  |
| tgt ccc ctg ccc cag aca aca ttc tgg ggg atg gtg aca ccc caa tct |     |     | 1589 |
| Cys Pro Leu Pro Gln Thr Thr Phe Trp Gly Met Val Thr Pro Gln Ser |     |     |      |
|   | 505 | 510 | 515  |
| tgg tcc tgc cat acc tag   |     |     | 1607 |
| Trp Ser Cys His Thr   |     |     |      |
|   | 525 |     |      |

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<223> PCR Primer

<400> 11

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16

<210> 12

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tcgagtccat tgcaccaagt c

21

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aagggaacgc aaggacacac ggaa

24

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<213> Artificial Sequence

<220>

<223> PCR Primer

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tcctctgcag acgcagacgg

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<400> 15

tctccacagg gttggcgctc

20

<210> 16

<211> 20

<212> DNA

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<400> 16  
tgtgcgtctc agtgtttcca 20

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```
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gtcggggtcca ttgtaccaag                20
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```
<210> 18
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<220>  
<223> Antisense Oligonucleotide

```
<400> 18
cagttgtccc tgcgcttgct                20
```

```
<210> 19
<211> 20
<212> DNA
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```

<220>  
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```
<400> 19
gccccgatcca gcagctccct                20
```

```
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<220>  
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```
<400> 20
tttccccagg gatggctcct                                20
```

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<220>  
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cagcagcctg ccctcatcaa                20
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 <400> 22  
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